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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/812,243	03/29/2004	Samhita Dasgupta	140322	2205

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GENERAL ELECTRIC COMPANY
GLOBAL RESEARCH
PATENT DOCKET RM. BLDG. K1-4A59
NISKAYUNA, NY 12309

EXAMINER	
JAWORSKI, FRANCIS J	

ART UNIT	PAPER NUMBER
3737	

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/812,243	DASGUPTA ET AL.	
	Examiner	Art Unit	
	Jaworski Francis J.	3737	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *3/29,9/2/04 IDS*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1 - 16* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1 - 16* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *29 March 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *3/29,9/2/04*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Specification

The disclosure is objected to because of the following informalities:

In para [0024] there is a non-sequitur after " advantageous ", for example read thereafter -- insofar as this --..

Appropriate correction is required.

Drawings

The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description:

Legend " 60 " mentioned in para [0026] line 3 is omitted from Fig. 3. (In the event that applicants intend to refer to -- 54 -- then it is the specification that needs changing and not the drawing, and consequently the correction instructions infra may be ignored.)

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as

either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

Claims 6, 9 – 10 and 12 are objected to because of the following informalities:

Claim 6 – the claim reads awkwardly since it depends from claim 1 not claim 5 which introduces the multiplexing feature, and (analog) electro-optical modulation may occur as a signal processing stage for purposes other than in association with multiplexing, see the various Group I rejections infra.

Claim 9 - it appears that after " detector " in line 1 – is – should be inserted.

Claim 10 – " the " before " optical signals" should be deleted since this term did not appear previously in the claim.

Claim 12 - it appears that in line 1 " an " should be deleted.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1 – 9 and 15 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

With respect to base claim 1, it is unclear whether the optical conduit and electro-optic modulators act in a receive mode and also whether the analog electrical signals are data signals or control signals, since they are not defined as in a receive signal path or as handling ultrasound imaging data signals. This results in a vagueness and indefiniteness in scope.

[The Riza-based rejection below is phrased so that it may be considered as representing how this ambivalence carries to a practical example.]

With respect to claims 5 and 15, there is lack of antecedence for " the transducer elements ". Note that an ultrasound probe in and of itself might have a fixed transducer element or a mechanically scanned single element, and yet the base claims still be viable since electro-optical modulation may reasonably occur for reasons other than in association with multiplexing as noted above.

Double Patenting

Claims 13 – 16 are objected to under 37 CFR 1.75 as being a substantial duplicate of claims 2 and 4 - 6. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in

wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

Claim Rejections - 35 USC § 102/103

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> **A person shall be entitled to a patent unless –**
>
> **(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.**
>
> **(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.**
>
> **(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.**

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> **(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.**

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was

not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Group I. Rejection Predatory Upon Ambivalence Regarding Ultrasound Transmit/Receive and Control/Information Signal Role of Opto-electronics

Claims 1, 6, 8 are rejected under 35 U.S.C. 102(b) as being anticipated by Riza (US5718226).

Riza is a prima facie relevant document towards this application's core inventive concept since it is directed to incorporation of opto-electronics into an ultracompact ultrasound array imaging probe for low power high speed operation and for enabling small diameter fiber-optic cable interconnection to the ultrasound signal processor, see col. 1 Background and col. 3 lines 33 – 45. Riza also has separate ultrasound transmitting (27) and receiving (37) array elements in its ultrasound probe and is an adaptation of radar technology with an architecture which duplicates many ultrasound control and signal processing functions by complex optics, and therefore might be alternatively viewed as involving opto-electronics 1) in transmission control and/or 2) in reception data forwarding. During receive, whether a Bragg grating design or piezoelectric coated fibers are used for receive array 37, the transducing is acoustic-to-optical without an electrical signal intermediate and the modulation is by phase shift and not amplitude (Col. 6 lines 12 – 25). And when electrical analog signals finally arise it is

after photo-detection at 39 and optic conduit activities have ceased in relation to the data signals, and a reasonable person might conclude that no electro-optical modulation by analog received ultrasound electrical (data) signals occurs and claim 1 is not rejectable thereon. However this is predicated on supposing that 'sensing and transmitting' in line 1 of the claim means " sensing i.e. receiving ultrasound pressure wave signals and transducing them to electrical signals for transmitting (to the signal processing and imaging stages). " An equally reasonable person might conclude that no such limitation to informational signals or to received signals is implied, and 'sensing and transmitting' in line 1 means instead " sensing (being responsive to) and transmitting based ultimately upon analog control signals " which then invites placing the transmission control optical electronics of Riza into the reading, whereupon (see col. 5 lines 25 – 67) the broadband optical modulator 24 and/or its state of polarization controls (SOP) are 'shaped ...i.e. amplitude modulated .... according to a transmit ultrasonic rf control signal' paraphrasing literal lines 29 – 31. This results in the optical conduits of fig. 2 coupling the laser source 23 under electro-optic modulation based on analog rf transmit control signals in component 24 to the optical detectors in the form of the photoconductive switches or photoacoustic material described at end-column 5 for the final transduction into ultrasound signals for transmitting. Under this latter interpretation then, Riza is in fact an anticipatory rejection basis against claims 1 and 8. Claim 6 groups with this rejection since the Fig. 2 element 26 demultiplexes the modulated optical signal into wavebands to provide them to the transmission elements.

Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Riza as applied to claim 1 above, and further in view of Sliwa, Jr. et al(US5560362). Whereas the former is silent as to use of thermal control cooling lines, it would have been obvious in view of the latter to include a plurality of such lines to form a cooling loop as per e.g. Figs. 3e and 4, since this allows operation near maximally permissible acoustic eergy intensities without contact surface heating as taught therein.

Group I I. Rejections Based on Ultrasound Analog Electro-optical Modulation Components Unassociated with Probe Head or Cable Multiplexing Front-end Processing

(Base claims 1 and 10 do not associate the claimed optical conduit and electro-optical modulators driven by analog probe electrical signals with a probe scanhead or cable or with the lead multiplexing/lead number reduction problem or with front-end signal processing (e.g. prior to beamforming or prior to video conversion), which breadth is applicants' right, however the result is that a wide variety of prior art is applicable as set forth in the various rejections within this grouping.).

(a) Re-conversion of Ultrasound Video to Analog for Storage

Claims 1 and 10-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Callahan et al (US5949491) and Akimoto (US4739521). The former suggests that

in order to picture archive or network manage the imager, one may convert the (digitized ultrasound transducer probe) video back into analog form for the transfer, see col. 4 lines 37 – 53. It would have been obvious in view of Akimoto col. 2 lines 49 – 52 to amplitude modulate based on such an analog video. Since it matters not which is the base reference, meaning that Callahan et al may alternatively serve to clarify what Akimoto is proposing re video signal format, either reference may serve as the base reference, the point being that these rejected claims embrace back-conversion of ultrasound probe-derived video back to analog for signal shuffling with suitable amplification within a network including by electro-optical amplitude modulation driven by the analog video information. The data is ultimately assembled into digital video for the picture display.

(b) Network Ultrasound Data Transfer

Claims 1 and 10 – 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wood et al (US5715823) alone or further in view of McMorrow et al (US6569097), in either case further in view of Groezinger (US6101407). Wood et al in col. 5 lines 6 – 22 teaches that the ultrasound probe-derived .data signals, in whatever final digital form they may reside, may be converted to analog form for modem transmission across the Internet. McMorrow et al provides an alternative where the ultrasound DCD data while locally converted to digital form may be unprocessed raw RF data which is forwarded via a thin server e.g. PDA connected via infrared link (col. 6 top) to a network

connection for Internet transmission in what is effectively a telemedicine application. Since Groezinger notes cols.8 – 9 bridging that network connections may be fiber-optic, the argument is made that it would have been obvious to create analog data from ultrasound probe-derived signals either in image form as per Wood et al or in a less processed RF state as per McMorrow et al and forward across the Internet via fiber optic link where the analog electrical signals modulate the optical signals of this optical information conduit.

(c) Discrete Ultrasound System Signal Processing Electro-optical Components

Claims 1, 8 - 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kitney et al (US5081993).in view of Hamilton et al (US5010346), alone or further in view of Shoop (US6529150). The former represents an ultrasound imaging system which uses a flash A/D converter 8, see cols. 4 – 5 bridging. Since Hamilton et al evidences that it had become known in the signal processing art that such flash or 'fast' A/D converters could be improved upon for their speed by performing the digitization using electro-optical elements including laser 12 modulated by the analog source 32, see col. 5 lines 44 – 52, it would have been obvious to use such an enhancement for Kitney et al 8 where the analog ultrasound signal would modulate the optical device, since Kitney et al is approaching the higher frequency RF ranges of intravascular imaging, see col. 5 line 14 where ultra-fast sampling is necessary. In the alternative, Shoop et al in the patent's col. 1 – 2 review of photonic A/D converters which the Examiner for purposes of this argument is likening to applicants' base claims' 'electro-

optic modulator' portion languages under the reference combination, notes inter alia that (laser based 8) Mach-Zender interferometers which are one modulator option embraced by the application's disclosure in para [0033] were one known photonic A/D design variant component col. 1 bottom such that whereas applicants' purpose inter alia is to remove the power requirement for an A/D converter in the probe head (para [0024]) and therefore this argument variant proposes that electro-optic A/D conversion is a structural analog closely likenable to applicants' claimed modulator.

Group III Rejections Regarding Electro-optic Modulation Associated with Ultrasound Probe Head/Cable/Front-end Processing

.a) Cordless ultrasound Probe Heads

Claims 1, 6 and 10 – 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hwang et al (US6142946) in view of Jago et al (US6890301) The former is directed inter alia to analog beamforming or sampled analog beamforming in the probe head 10 with wireless transmission to the ultrasound system 30 of the sensed ultrasound data in this format. Whereas Hwang et al is silent as to use of optics in forming the transmission link, it would have been obvious in view of Jago et al col. 2 lines 17 – 30 or col. 7 lines 56 – 58 to provide a multiplexed/de-muxed optical link (conduit and light path merely meaning channel under this interpretation since fiber or cable are absent as defining terms in the claims) since this was a known alternative for

forwarding-transmitting ultrasound data wirelessly out of the probe head to the signal processing portion.

Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hwang et al in view of Jago et al as applied to claim 1 above, and further in view of Bartelt et al (EP 0 762 142 A1). Whereas the former are silent as to how one might analog multiplex onto a conduit pathway or optical waveguide, it would have been obvious in view of the latter (Abstract translation appended at end-document) to analog-multiplex onto a discrete waveguide conduit since this would avoid the 'line-of-sight' shortcoming for the optic link as mentioned in Jago et al.

b) Prior GE-Assigned Optic Transducer Technology

[Note: Applicants are kindly requested to review the documentation associated with prosecution of this past in-house technology of the assignee such that the Rule 56 Duty to Disclose requirement has been inarguably met with respect to this application because incidental variant embodiments to the main disclosures of the base reference patents below have proven to make them relevant, vide infra.]

Claims 1, 8 are rejected under 35 U.S.C. 102(b) as being anticipated by Yakmyshyn et al (US5353262) or Duggal et al (US5532981). The latter, Duggal et al relates to the former as per the respective figs. 1, namely Duggal et al swaps Vertical Cavity Surface Emitting Laser Array 20 for the former 's element 100 which transducer 100 may be enacted by direct acoustic dimensional change to the laser cavity or by the

intermediate of a piezoelectric transducer acting on an electro-optical cell in an alternate embodiment. It is this alternative in the former and a col. 5 line 58 – 63 variant in the latter which are at issue here, both being grouped under the heading for compactness of discussion.

Yakmyshyn et al teaches in the main that an ultrasound system may comprise an optical ultrasound receive transducer which in its assemblage may have components for direct acousto-optic transduction. However in the alternative Figure 3A and 3B embodiments the receive transducer is in fact a piezoelectric element 190 which provides an electrical signal output to a lasing medium 132 or to a Pockels cell or other electro-optic cell variant 185 such that a fiber-optic output is provided out of probe head 100 to signal processing portion 200.

Duggal et al (the patent is representative of the related EP 0763192B1 made of record in applicants' IDS) analogously teaches in the main that a VCSEL array of semiconductor microlasers may have the individual frequencies modulated by the acoustic disturbance and then in turn amplitude modulate a Fabry perot resonator stage such that an amplitude modulated optic signal proceeds out of the probe head assembly 20 to signal processor 30 as per col. 5 lines 21 – 42, effectively an acousto-optic transduction using two optic stages. However in the alternative discussed in col. 5 lines 43 – 63 the amplitude modulation may be intercepted by a charge-coupled device (CCD) array in which case it becomes an amplitude modulated electrical signal on output ordinarily simply forwarded on an electric-wired cable but if line density is high enough it may be converted to optic data onto fiber-optic out, which is interpretable as

electrical amplitude modulation signals converted to optic as an electro-optical modulation in the final stage.

Claims 2 – 3 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yakmyshyn et al or Duggal et al as applied to claim 1 above, and further in view of Smith et al (US6476541) alone or further in view of Allen et al (US4923288) or Yakmyshyn et al (US5396362) since whereas the former does not mention polymer use in the electro-optic modulator, it would have been obvious in view of (a) Smith et al to use a polymer in a matrix the electro-optic modulator as defined in the former, supra, in order to match the laser cavity impedance to the transmission medium of the returning acoustic wave, see co. 5 lines 26 – 38, and to use silicon in the device since it was known to exercise control through silicon controlled switch elements as 44 therein. In the alternative, Allen et al additionally notes that the substitution of organic polymer materials for the inorganic materials of the electro-optical modulator stated in portions of Smith et al would have resulted in lower cost and simpler fabrication of the component irrespective of technological application. Additionally in alternative, Yakmyshyn et al '362 in a design specific for increasing ultrasound pixel density per col. 1 lines 27 – 28, uses organic materials for the electro-optical modulation including a modulator buffer layer 230 in order to achieve design optical refraction properties, see col. 6 lines 54 – 65.

[Alternately stated, since the claiming of the inclusion of polymer into the electro-optic modulator is a key feature among the claims, the Examiner is presenting a severality of arguments to insure complete consideration of obviousness bases: the

prior incorporation of polymers into the ultrasound matrix portion of the device, the generic teaching in the art that polymer e/o modulators have superior features over inorganic-based devices, and the inclusion of polymer components into a closely related prior art Yakmyshyn et al – based design.]

Claims 4 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over the Y/D/S/A/Y(abbreviated patentee names) argument as applied to claims 2, 13 above, and further in view of L:iu et al (US6248069, of record with the applcants' IDS) since the latter teaches in element 118 that it would have been obvious to include an amplifier in association with electro-optical modulation in order to adjust response levels.

Claims 5 – 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over the Y/D/S/A/Y argument as applied to claim 2 above, and further in view of Kitney et al element 5 or Bartelt, abstract, since whereas the former are silent as to multiplexing, it would have been obvious in view of the latter to multiplex signal outputs from an ultrasound array where a small fiber-optic cable diameter is desirable, whereupon de-multiplexing is done at the opposite end of the transmission link in order to recover the link-transmitted information

Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yakmyshyn et al or Duggal et al as applied to claim 1 above, and further in view of Sliwa et al, for reasons analogous to those stated in the Group I rejection supra.

Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yakmyshyn et al or Duggal et al as applied to claim 1 above, and further in view of Tiemann (US5565867), since whereas the former do not specify A/D conversion, it

would have been obvious in view of the latter to perform such during optical modulation in view of the high speeds achievable.

Claims 10 - 11 are also rejected under 35 U.S.C. 103(a) as obvious based upon Yakmyshyn et al (US5739936) in view of Kitney et al, the latter having been discussed re Group II c) rejection supra). Yakmyshyn '936 is directed to an improvement in electro-optic modulation using inter alia a Mach-Zehnder interferometer where the modulating means is configured to create a modulation and inverse modulation of the MRI probe RF information signal and in the context of forwarding of RF probe coil information in the high noise environment of that imaging mode or in the alternative context of ultrasound imaging per the col. 3 line 43 – 44 stated alternative.(claim 10 not being limited to ultrasound). Whereas Yakmyshyn et al invokes formation of an MRI or ultrasound image it is argued that this inherently implies digitization as evidenced by Kitney et al 8 as a reference of convenience, since signal processing and spatial preservation of information is facilitated by such.

Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yakmyshyn et al in view of Kitney et al as applied to claim 11 above, and further in view of Liu et al (US6248069, of record with applicants' IDS) since whereas the former does not discuss an amplifier stage it would have been obvious in view of the latter element 118 to associate an amplifier with optoelectronic components in order to adjust signal ranges.

Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Y/D/S/A/Y argument, further in view of Liu et al as applied to claim 14 above, and further in view of Kitney et al or Bartelt et al.

Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over the Y/D/S/A/Y argument as applied to claim 13 above, and further in view of Kitney et al or Bartelt et al.

In both rejections, the reasoning parallels the application of these references against respective claims 5 and 6, supra.

Ogawa (US6609425 and US6783494) are representative of a series of related patents which utilize direct acousto-optic conversion via Fabry-Perot resonator chamber dimensional changes (former, col. 6 lines 13 – 30) or in an alternative embodiment by using a Bragg grating fiber arrangement as aforementioned, see Ogawa'425 col. 5 lines 32 – 62.

Heflinger (US6118397) is cited as an additional background document in relation to electro-optic A/D conversion in RF ranges regarding the Group II (c) argument supra.

Smith et al (US5419329) is directed to a fiber optic transmission cable alternative for transmity generation in a probe head via an optoelectronic transmitting circuit.

Any inquiry concerning this communication should be directed to Jaworski Francis J. at telephone number 571-272-4738.

FJJ:fjj

042606

Francis J. Jaworski
Primary Examiner